
Book Reviews

Simmonds, N.W.: Principles of Crop Improvement.

London-New York: Longman 1979. 408 pp., 69 figs., 40 tabs. Soft bound £ 7.95.

'Principles of Crop Improvement' is intended by the author's design for the beginning graduate student and to serve as a broad introduction to the subject of plant breeding. This objective is achieved in large measure.

The subject is introduced by considering it (not a unique treatment) as an accelerated form of the evolution of crop plants. The objectives of plant breeding are then discussed in considerable detail before proceeding to the genetic aspects underlying plant breeding and to breeding plans. The testing of new selections, plans of seed multiplication, and breeding for disease resistance are discussed in detail.

A chapter on special techniques includes considerations of polyploidy, wide crosses, the use of haploidy in plant breeding, mutagenic approaches, and *in vitro* methods. The final two chapters then treat the subjects of germ plasm conservation and the social context in which plant breeding operations are carried on.

The breadth of scope with which the subject of plant breeding is surveyed precludes examination in depth of population and quantitative genetics to the extent desired in most plant breeding courses. It does, however, succeed in delineating the social influences impinging on the process of plant improvement. These influences, which I suspect are scantily (if at all) discussed in most plant breeding courses, are important determinants of the support which a project receives and of the extent to which the project is considered successful. Yet without some consideration of these factors early in a plant breeder's education, recognition may arise only belatedly and gradually. For this reason I find the overall treatment important.

The difficulties of evaluating plant breeding projects by cost benefit analysis are made clear although Professor Simmonds ventures the opinion that plant breeding overall is 'economically attractive in cost-benefit terms'. The conclusion that the 'green revolution' failed overall would elicit a lively debate in many quarters.

The relatively recent date of publication allows a balanced discussion of induced mutation and *in vitro* techniques as tools which may be useful in particular instances. The important subject of germ plasm conservation is introduced by showing how successful plant breeding programs narrow the germ plasm base of a crop.

In summary, 'Principles of Crop Improvement' has appeal because of the broad treatment of the subject. It should be useful as a supplemental text in most plant breeding courses or as a text that would be supplemented in the areas of population and quantitative genetics.

O.F. Nelson, Madison

Vogel, F.; Motulsky, A.G.**Human Genetics. Problem and Approaches**

Berlin-Heidelberg-New York: Springer 1979. XXVIII 700 pp. 420 figs. 210 tabs. Hard bound DM 98,—.

Problems and approaches in human genetics are thoroughly and vividly discussed in this book by a German and an American author. It is a 'genomic complementation' of 'trans.-Atlantic experience. As can be expected in a complementation test, the phenotype does not give any idea of the paternity of the chapters. The book is well balanced and critical though not easy to read without a basic knowledge of general genetics, biochemistry and clinical terminology (e.g. p. 33 crossing-over; p. 264 HMGCoA reductase; p. 277 tomboyism). For an advanced textbook it would be acceptable were the subject index and cross-references faultless, but this is not the case. (e.g. nucleosomes are not mentioned on p. 278 as cited in the table of contents due to a frameshift between p. 267 and p. 280. Neither the legends to the figures or the text always give the information necessary for understanding the figures (e.g. fig. 3.37, 3.43). Additional citations of literature in the text are sometimes missing in the reference list (e.g. 640a, 826a; 741a should be 720a). This list is numbered throughout as well as in alphabetical order within chapters, but in the author index not all publications are included (e.g. 719). The decimal numbering of paragraphs is in some places one digit too many (e.g. 6). Fortunately only few printing errors are misleading (e.g. p. 143 gamma instead of delta). Who is to blame for all these last minute small errors, the authors or the publishers?

The book has an introduction and nine chapters: History, Chromosomes, Formal Genetics (with nine appendices), Gene Actions, Mutation, Population Genetics, Evolution, Behaviour and finally Applications and Future. One could wish for further subdivisions between and within chapters, but in any case some redundancy does arise (7.2.4 'Behaviour' and 8). Familial hypercholesterolemia is discussed on page 188 (under Twin Method) without reference to page 264 (Receptor mutations). Of course it is legitimate to use a specific paradigm (see Introduction) in different contexts provided there are ample cross-references, but this example clearly demonstrates that this book is for students of human genetics and not primarily for students of medical or clinical genetics. One could wish that indeed clinicians would study these problems and approaches in detail and really learn to understand the possibilities and pit-falls of the study of human genetics. Anyone who would like to know more than can be offered in an introductory course has to study this textbook from the first to the last page in order to make up his own mind and to know on what points and why he disagrees with the authors. The book is not dogmatic but stimulating, paradigmatic and critical.

S.J. Geerts, Nijmegen